

§ 393.122

49 CFR Ch. III (10–1–02 Edition)

be held in place by coil bunks or similar devices to prevent them from coming loose. The use of nailed blocking or cleats as the sole means to secure timbers, chocks or wedges, or a nailed wood cradle, is prohibited;

(ii) At least one tiedown over the top of each coil or transverse row, located near the forward-most part of the coil;

(iii) At least one tiedown over the top of each coil or transverse row, located near the rearmost part of the coil; and

(iv) Either blocking, bracing or friction mats to prevent longitudinal movement.

(e) *Securement of coils transported in a sided vehicle without anchor points or an intermodal container without anchor points.* Metal coils transported in a vehicle with sides without anchor points or an intermodal container without anchor points must be loaded in a manner to prevent shifting and tipping. The coils may also be secured using a system of blocking and bracing, friction mats, tiedowns, or a combination of these to prevent any horizontal movement and tipping.

§ 393.122 What are the rules for securing paper rolls?

(a) *Applicability.* The rules in this section apply to shipments of paper rolls which, individually or together, weigh 2268 kg (5000 lb) or more. Shipments of paper rolls that weigh less than 2268 kg (5000 lb), and paper rolls that are unitized on a pallet, may either be secured in accordance with the rules in this section or the requirements of §§ 393.100 through 393.114.

(b) *Securement of paper rolls transported with eyes vertical in a sided vehicle.* (1) Paper rolls must be placed tightly against the walls of the vehicle, other paper rolls, or other cargo, to prevent movement during transit.

(2) If there are not enough paper rolls in the shipment to reach the walls of the vehicle, lateral movement must be prevented by filling the void, blocking, bracing, tiedowns or friction mats. The paper rolls may also be banded together.

(3) When any void behind a group of paper rolls, including that at the rear of the vehicle, exceeds the diameter of the paper rolls, rearward movement must be prevented by friction mats,

blocking, bracing, tiedowns, or banding to other rolls.

(4)(i) If a paper roll is not prevented from tipping or falling sideways or rearwards by vehicle structure or other cargo, and its width is more than 2 times its diameter, it must be prevented from tipping or falling by banding it to other rolls, bracing, or tiedowns.

(ii) If the forwardmost roll(s) in a group of paper rolls is not prevented from tipping or falling forwards by vehicle structure or other cargo and it is restrained against forward movement by friction mat(s) alone, and its width is more than 1.75 times its diameter, it must be prevented from tipping or falling forwards by banding it to other rolls, bracing, or tiedowns.

(iii) Otherwise, when a paper roll or the forwardmost roll in groups of rolls that are not prevented from tipping or falling forwards by vehicle structure or other cargo and its width exceeds 1.25 times its diameter it must be prevented from tipping or falling by banding it to other rolls, bracing or tiedowns.

(5) If paper rolls are banded together, the rolls must be placed tightly against each other to form a stable group. The bands must be applied tightly, and must be secured so that they cannot fall off the rolls or to the deck.

(6) A friction mat used to provide the principal securement for a paper roll must protrude from beneath the roll in the direction in which it is providing that securement.

(c) *Securement of split loads of paper rolls transported with eyes vertical in a sided vehicle.* (1) If a paper roll in a split load is not prevented from forward movement by vehicle structure or other cargo, it must be prevented from forward movement by filling the open space, or by blocking, bracing, tiedowns, friction mats, or some combination of these.

(2) A friction mat used to provide the principal securement for a paper roll must protrude from beneath the roll in the direction in which it is providing that securement.

(d) *Securement of stacked loads of paper rolls transported with eyes vertical in a sided vehicle.* (1) Paper rolls must not be loaded on a layer of paper rolls beneath

unless the lower layer extends to the front of the vehicle.

(2) Paper rolls in the second and subsequent layers must be prevented from forward, rearward or lateral movement by means as allowed for the bottom layer, or by use of a blocking roll from a lower layer.

(3) The blocking roll must be at least 38 mm (1.5 in) taller than other rolls, or must be raised at least 38 mm (1.5 in) using dunnage.

(4) A roll in the rearmost row of any layer must not be raised using dunnage.

(e) *Securement of paper rolls transported with eyes crosswise in a sided vehicle.* (1) The paper rolls must be prevented from rolling or shifting longitudinally by contact with vehicle structure or other cargo, by chocks, wedges or blocking and bracing of adequate size, or by tiedowns.

(2) Chocks, wedges or blocking must be held securely in place by some means in addition to friction, so they cannot become unintentionally unfastened or loose while the vehicle is in transit.

(3) The rearmost roll must not be secured using the rear doors of the vehicle or intermodal container, or by blocking held in place by those doors.

(4) If there is more than a total of 203 mm (8 in) of space between the ends of a paper roll, or a row of rolls, and the walls of the vehicle, void fillers, blocking, bracing, friction mats, or tiedowns must be used to prevent the roll from shifting towards either wall.

(f) *Securement of stacked loads of paper rolls transported with eyes crosswise in a sided vehicle.* (1) Rolls must not be loaded in a second layer unless the bottom layer extends to the front of the vehicle.

(2) Rolls must not be loaded in a third or higher layer unless all wells in the layer beneath are filled.

(3) The foremost roll in each upper layer, or any roll with an empty well in front of it, must be secured against forward movement by:

(i) Banding it to other rolls, or

(ii) Blocking against an adequately secured eye-vertical blocking roll resting on the floor of the vehicle which is at least 1.5 times taller than the diameter of the roll being blocked, or

(iii) Placing it in a well formed by two rolls on the lower row whose diameter is equal to or greater than that of the roll on the upper row.

(4) The rearmost roll in each upper layer must be secured by banding it to other rolls if it is located in either of the last two wells formed by the rearmost rolls in the layer below.

(5) Rolls must be secured against lateral movement by the same means allowed for the bottom layer when there is more than a total of 203 mm (8 in) of space between the ends of a paper roll, or a row of rolls, and the walls of the vehicle.

(g) *Securement of paper rolls transported with the eyes lengthwise in a sided vehicle.*

(1) Each roll must be prevented from forward movement by contact with vehicle structure, other cargo, blocking or tiedowns.

(2) Each roll must be prevented from rearward movement by contact with other cargo, blocking, friction mats or tiedowns.

(3) The paper rolls must be prevented from rolling or shifting laterally by contact with the wall of the vehicle or other cargo, or by chocks, wedges or blocking of adequate size.

(4) Chocks, wedges or blocking must be held securely in place by some means in addition to friction, so they cannot become unintentionally unfastened or loose while the vehicle is in transit.

(h) *Securement of stacked loads of paper rolls transported with the eyes lengthwise in a sided vehicle.* (1) Rolls must not be loaded in a higher layer if another roll will fit in the layer beneath.

(2) An upper layer must be formed by placing paper rolls in the wells formed by the rolls beneath.

(3) A roll in an upper layer must be secured against forward and rearward movement by any of the means allowed for the bottom layer, by use of a blocking roll, or by banding to other rolls.

(i) *Securement of paper rolls transported on a flatbed vehicle or in a curtain-sided vehicle—(1) Paper rolls with eyes vertical or with eyes lengthwise.*

(i) The paper rolls must be loaded and secured as described for a sided vehicle, and the entire load must be secured by

§ 393.124

tiedowns in accordance with the requirements of §§ 393.100 through 393.114.

(i) Stacked loads of paper rolls with eyes vertical are prohibited.

(2) *Paper rolls with eyes crosswise.* (i) The paper rolls must be prevented from rolling or shifting longitudinally by contact with vehicle structure or other cargo, by chocks, wedges or blocking and bracing of adequate size, or by tiedowns.

(ii) Chocks, wedges or blocking must be held securely in place by some means in addition to friction so that they cannot become unintentionally unfastened or loose while the vehicle is in transit.

(iii) Tiedowns must be used in accordance with the requirements of §§ 393.100 through 393.114 to prevent lateral movement.

§ 393.124 What are the rules for securing concrete pipe?

(a) *Applicability.* (1) The rules in this section apply to the transportation of concrete pipe on flatbed trailers and vehicles, and lowboy trailers.

(2) Concrete pipe bundled tightly together into a single rigid article that has no tendency to roll, and concrete pipe loaded in a sided vehicle or container must be secured in accordance with the provisions of §§ 393.100 through 393.114.

(b) *General specifications for tiedowns.* (1) The aggregate working load limit of all tiedowns on any group of pipes must not be less than half the total weight of all the pipes in the group.

(2) A transverse tiedown through a pipe on an upper tier or over longitudinal tiedowns is considered to secure all those pipes beneath on which that tiedown causes pressure.

(c) *Blocking.* (1) Blocking may be one or more pieces placed symmetrically about the center of a pipe.

(2) One piece must extend at least half the distance from the center to each end of the pipe, and two pieces must be placed on the opposite side, one at each end of the pipe.

(3) Blocking must be placed firmly against the pipe, and must be secured to prevent it moving out from under the pipe.

49 CFR Ch. III (10–1–02 Edition)

(4) Timber blocking must have minimum dimensions of at least 10 × 15 cm (4 × 6 in).

(d) *Arranging the load—*(1) *Pipe of different diameter.* If pipe of more than one diameter are loaded on a vehicle, groups must be formed that consist of pipe of only one size, and each group must be separately secured.

(2) *Arranging a bottom tier.* The bottom tier must be arranged to cover the full length of the vehicle, or as a partial tier in one group or two groups.

(3) *Arranging an upper tier.* Pipe must be placed only in the wells formed by adjacent pipes in the tier beneath. A third or higher tier must not be started unless all wells in the tier beneath are filled.

(4) *Arranging the top tier.* The top tier must be arranged as a complete tier, a partial tier in one group, or a partial tier in two groups.

(5) *Arranging bell pipe.* (i) Bell pipe must be loaded on at least two longitudinal spacers of sufficient height to ensure that the bell is clear of the deck.

(ii) Bell pipe loaded in one tier must have the bells alternating on opposite sides of the vehicle.

(iii) The ends of consecutive pipe must be staggered, if possible, within the allowable width, otherwise they must be aligned.

(iv) Bell pipe loaded in more than one tier must have the bells of the bottom tier all on the same side of the vehicle.

(v) Pipe in every upper tier must be loaded with bells on the opposite side of the vehicle to the bells of the tier below.

(vi) If the second tier is not complete, pipe in the bottom tier which do not support a pipe above must have their bells alternating on opposite sides of the vehicle.

(a) *Securing pipe with an inside diameter up to 1,143 mm (45 in).* In addition to the requirements of paragraphs (b), (c) and (d) of this section, the following rules must be satisfied:

(1) *Stabilizing the bottom tier.* (i) The bottom tier must be immobilized longitudinally at each end by blocking, vehicle end structure, stakes, a locked pipe unloader, or other equivalent means.